

**IN THE CLAIMS:**

Please cancel claims 1-20 and add claim 23 as follows:

1.(Cancelled)

2.(Cancelled)

3.(Cancelled)

4.(Cancelled)

5.(Cancelled)

6.(Cancelled)

7.(Cancelled)

8.(Cancelled)

9.(Cancelled)

10.(Cancelled)

11.(Cancelled)

12.(Cancelled)

13.(Cancelled)

14.(Cancelled)

15.(Cancelled)

16.(Cancelled)

17.(Cancelled)

18.(Cancelled)

19.(Cancelled)

20.(Cancelled)

21.(Cancelled)

22.(Cancelled)

23.(New)     A system for compensating for distortion within an analog-to-digital converter, the system comprising:

a test signal generator that provides an analog test signal and a digitized test signal indicative of the analog test signal;

an analog-to-digital converter that selectively receives an input signal and the analog test signal and provides a digitized signal;

a compensation circuit that receives the digitized signal and adaptive filter coefficients, and provides a compensated digitized signal;

a test signal check device that receives and processes the compensated digital signal to extract a sequence of output data;

a difference unit that receives the sequence of output data and the compensated digital signal and provides a difference signal indicative of the difference; and

a coefficient determination unit that receives the difference signal and the digitized signal and provides adaptive filter coefficients.